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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,878	07/21/2003	Curtis Reese	200206812-1	5898
22879 7590 03/19/2008 HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400				
EXAMINER				
TO, BAOTRAN N				
ART UNIT		PAPER NUMBER		
2135				
NOTIFICATION DATE		DELIVERY MODE		
03/19/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/623,878

Applicant(s)

REESE ET AL.

Examiner

Bao Tran N. To

Art Unit

2135

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/28/2007 (RCE).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/28/2007 has been entered.

This Office action is responsive to the Applicant's Amendment filed 11/28/2007.

Claims 11-13 and 15-27 are amended.

Claims 1-10 and 28-58 are canceled.

Claims 11-27 remain for examination.

Response to Arguments

2. Applicant's arguments filed 11/05/2007 have been fully considered but they are not persuasive.

Applicant argues that Huang et al. "does not teach or disclose steganographic digital watermarks that steganographically encode digital data that can be machine read" (Page 6 of Remarks).

Examiner respectfully disagrees. Huang clearly discloses "An optical watermark has one or several watermark layers. One or two latent image objects are embedded into each watermark layer. Each watermark layer has different structure, as well as a corresponding decoder to observe the latent image object embedded in it. **The latent image object embedded in a watermark layer can not be observed by the unaided human eye unless a decoder corresponding to that watermark layer's**

structure is overlapped onto the watermark. On the other hand, a decoder for one watermark layer will not reveal latent image objects in other watermark layers due to the difference in their structure. As such, decoders can be considered as keys to the secrets, and the secrets are the latent image objects embedded in the watermark" (Paragraph 0011).

Applicant further argues that "Applicant respectfully submits that Paragraphs [0011] and [0012] of Huang et al. specifically cited by the Examiner do not teach two or more data layers" (Page 6 of Remarks).

Examiner respectfully disagrees. Huang clearly discloses "An optical watermark has one or several watermark layers" (Paragraph 0011).

Applicant further argues that "combining the elements of Huang et al. with Davis et al. also fails to teach or suggest a method that encodes digital metadata into two or more data layers of a digital steganographic watermark of the image, wherein one or more selected data layers of the two or more data layers encodes the metadata associated with a selected image object of the two or more image objects or encoding a plurality of layers of data in a digital steganographic watermark of at least one sub- image of an image and thus does not disclose or suggest all elements of the Applicant's claimed invention" (Pages 7 and 8 of Remarks).

Examiner respectfully disagrees with applicant. Davis discloses encoding the digital metadata into of a digital steganographic watermark of the image, encodes the digital metadata associated with a selected image object of the two or more image objects (paragraphs 0002, 0025 and 0091). Davis explicitly does not disclose "two or more data layers wherein one or more selected data layers of the two

or more data layers of the two or more data layers.” However, Huang expressly discloses wherein one or more selected data layers of the two or more data layers of the two or more data layers (paragraphs 0011 and 0013). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Huang’s invention within Davis to include two or more data layers wherein one or more selected data layers of the two or more data layers of the two or more data layers. One of ordinary skill in the art would have been motivated to do so because it would protect documents from counterfeit and forgery (Huang, paragraph 0010).

For at least the above reasons, it is believed that the rejection is maintained.

Claim Objections

3. Claim 12 is objected to because of the following informalities: “the metadata” in line 1 should be --the digital metadata---. Additionally, “a digital watermark of the image” in lines 2 and 3 should be ---the digital steganographic watermark of the image----. “where the steganographic watermark” in line 4 should be --- wherein the digital steganographic watermark--- Appropriate correction is required.

Claim 13 is objected to because of the following informalities: “the metadata” in line 1 should be --the digital metadata---. Additionally, “a digital watermark of the image” in lines 2-3 should be ---the digital steganographic watermark of the image----. “the watermark” in line 4 should be ---the digital steganographic watermark of the image----Appropriate correction is required.

Claim 15 is objected to because of the following informalities: "a digital steganographic watermark of the image" in line 2 should be ---the digital steganographic watermark of the image----. Appropriate correction is required.

Claim 16 is objected to because of the following informalities: "digital metadata in a digital steganographic watermark" in line 2 should be --- the digital metadata in the digital steganographic watermark ----. Appropriate correction is required.

Claim 17 is objected to because of the following informalities: "a digital steganographic watermark of the image" in line 2 should be ---the digital steganographic watermark of the image----. Appropriate correction is required.

Claim 19 is objected to because of the following informalities: "a digital steganographic watermark" in line 2 should be ---the digital steganographic watermark ----. Appropriate correction is required.

Claim 20 is objected to because of the following informalities: "a digital steganographic watermark" in lines 2 and 4 should be ---the digital steganographic watermark ----. Appropriate correction is required.

Claim 22 is objected to because of the following informalities: "a digital steganographic watermark" in line 2 should be ---the digital steganographic watermark ----. Appropriate correction is required.

Claim 24 is objected to because of the following informalities: "a digital steganographic watermark of the image" in lines 2-4 should be --- the digital steganographic watermark of the image ---. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al. (U.S. P.G. Publication 2002/0001395 A1) hereinafter Davis in view of Huang et al. (U.S. P.G. Publication 2002/0054680) hereinafter Huang.

Regarding Claims 11 and 23, Davis discloses a method of watermarking an image:

Associating digital metadata with each image object of two or more image objects of an image (paragraphs 0002, 0003, 0015 and 0018); and

encoding the digital metadata into of a digital steganographic watermark of the image, encodes the digital metadata associated with a selected image object of the two or more image objects (paragraphs 0002, 0025 and 0091).

Davis explicitly does not disclose “two or more data layers wherein one or more selected data layers of the two or more data layers of the two or more data layers.”

However, Huang expressly discloses wherein one or more selected data layers of the two or more data layers of the two or more data layers (paragraphs 0011 and 0013).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Huang’s invention within Davis to include two or more data layers wherein one or more selected data layers of the two or more data layers of the two or more data layers. One of ordinary skill in the art would have been motivated to do so because it would protect documents from counterfeit and forgery (Huang, paragraph 0010).

Regarding Claim 18, Davis discloses a method of watermarking at least one sub-image of an image, comprising:

encoding data in a digital steganographic watermark of at least one sub-image of an image, data are metadata associated with the at least one sub-image (paragraphs 0002, 0025 and 0091).

Davis explicitly does not disclose “plurality of layers of data wherein plurality of layers of data.”

However, Huang expressly discloses plurality of layers of data wherein plurality of layers of data (paragraphs 0011 and 0013).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Huang’s invention within Davis to include plurality of layers of data

wherein plurality of layers of data. One of ordinary skill in the art would have been motivated to do so because it would protect documents from counterfeit and forgery (Huang, paragraph 0010).

Regarding Claims 12 and 24, Davis and Huang disclose the limitations of Claims 11 and 23 above. Davis and Huang further disclose wherein encoding the metadata into two or more data layers of a digital watermark of the image further comprises encoding the metadata into two or more data layers of a digital watermark of the image (Davis, paragraphs 0002, 0025 and 0036 and Huang, paragraphs 0011 and 0013), where the watermark is a high coding rate watermark (Davis, paragraphs 0002, 0025 and 0091 and Huang, paragraphs 0043).

Regarding Claims 13 and 25, Davis and Huang disclose the limitations of Claims 11 and 23 above. Davis and Huang further disclose wherein encoding the metadata into two or more data layers of a digital watermark of the image further comprises encoding the metadata into two or more data layers of a digital watermark of the image, where the watermark contains two or more sub-watermarks, each sub-watermark of a differing encoding method and/or transform (Davis, paragraphs 0002, 0036 and 0071 and Huang, paragraphs 0011 and 0025).

Regarding Claims 14 and 25, Davis and Huang disclose the limitations of Claims 13 and 25 above. Davis and Huang further disclose wherein each layer of the two or more data layers are encoded into a selected sub-watermark (Davis, paragraphs 0002, 0025 and 0071 and Huang, paragraphs 0011 and 0013).

Regarding Claims 15 and 26, Davis and Huang disclose the limitations of Claims 11 and 23 above. Davis and Huang further disclose encoding the metadata into two or more data layers of a watermark of the image further comprises encoding one or more data areas in at least one of the two or more data layers of the watermark (Davis, paragraphs 0002, 0036 and 0091 and Huang, paragraphs 0011, 0013, and 0027).

Regarding Claims 16 and 25, Davis and Huang disclose the limitations of Claims 11 and 23 above. Davis and Huang further disclose encoding two or more layers of metadata in a watermark in one or more image objects of the image (Davis, paragraphs 0002, 0025 and 0071 and Huang, paragraphs 0011 and 0027).

Regarding Claims 17 and 26, Davis and Huang disclose the limitations of Claims 11 and 23 above. Davis and Huang further disclose wherein encoding the metadata into two or more data layers of a digital watermark of the image further comprises encoding at least one of a manufacturer information layer, an object characteristics layer, an order information layer, and a manufacturer designated layer (Davis, paragraphs 0025, 0036 and 0091 and Huang, paragraphs 0011 and 0013).

Regarding Claim 19, Davis and Huang disclose the limitations of Claim 18 above. Davis and Huang further disclose wherein encoding the plurality of layers of data in a digital watermark of at least one sub-image of the image (Davis, paragraphs 0002, 0025 and 0091 and Huang, paragraphs 0011 and 0013) further comprises encoding the plurality of layers of data in a high coding rate watermark (Huang, paragraphs 0043).

Regarding Claim 20, Davis and Huang disclose the limitations of Claim 18 above. Davis and Huang further disclose wherein encoding the plurality of layers of data in a digital watermark of at least one sub-image of the image further comprises encoding the plurality of layers of data in a watermark containing a plurality of sub- watermarks, each sub-watermark encoded with a different encoding method and/or transform (Davis, paragraphs 0002, 0025 and 0091 and Huang, paragraphs 0011 and 0025).

Regarding Claim 21, Davis and Huang disclose the limitations of Claim 20 above. Davis and Huang further disclose wherein each layer of the plurality of layers of data are encoded into a separate sub-watermark (Davis, paragraphs 0002, 0025 and 0091 and Huang, paragraphs 0011 and 0013).

Regarding Claim 22, Davis and Huang disclose the limitations of Claim 20 above. Davis and Huang further disclose wherein encoding the plurality of layers of data in a digital watermark of at least one sub-image of the image further comprises encoding one or more data areas in the two or more layers of data of the at least one sub-image (Davis, paragraphs 0002, 0025 and 0091 and Huang, paragraphs 0011 and 0027).

Contact Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bao Tran N. To whose telephone number is (571)272-8156. The examiner can normally be reached on Monday-Friday from 8:00 to 4:30.

Art Unit: 2135

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y. Vu can be reached on 571-272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/B. N. T./

Examiner, Art Unit 2135

03/05/2008

/KIMYEN VU/

Supervisory Patent Examiner, Art Unit 2135